

SOME COMMON DRUG HABITS

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DRUG habits are of two kinds—addiction and non-addiction. The latter are almost universal, the drug being taken mainly as a beverage. The effects are not serious. In the former, however, the individual is wholly given up to his drug—it becomes his chief business in life. The consequences here are serious and often reduce an individual to a mere ghost of his previous self, mentally, morally and physically.

NON-ADDICTION DRUGS.

1. **CAFFEINE.** The Xanthin derivatives comprise an important group of non-addiction habit-forming drugs. *Caffeine* is the most widely-used, but its relatives *Theobromine* and *Theophylline* are also common. The plants which yield these products have nothing in common and are not even in the same botanical family. Yet it is a curious fact that peoples in different parts of the globe have discovered their stimulating properties.

TEA. Tea, the dried, prepared leaf of *Thea chinensis*, contains from 1.4 to 3.5 per cent of Caffeine and as much as 10 to 30 per cent of Tannin. The word *tea* is derived from the Chinese "*Cha*," Amoy dialect "*Te*" and it is interesting to note that in many of the world's languages the word tea is derived from one or other of these. Thus tea in French is *thé*, in German *tee*, in Russian *chai*, in Arabic *chai*, and in Urdu *cha*. The plant is indigenous to China and Assam, but is now cultivated elsewhere. Nothing definite is known about the origin of its use, but a Chinese legend has it that the virtues of tea were discovered by the Emperor Chinnung 2737 B.C., to whom all agricultural and medical knowledge is traced. It is doubtfully referred to in a book of ancient poems edited by Confucius, all of which poems date previous to 550 B.C. It is certain that tea was used as a beverage in China during the 6th century A.D. and its use had grown so prevalent by the 8th century that a tax was levied on it in 793 A.D.

The beverage tea is a 1 to 4 per cent infusion and a cup of strong tea prepared from 5 grams (one drachm) of dried prepared leaves con-

tains between 0.1 and 0.15 gram (1 to 2½ grain) of caffeine.

COFFEE. Coffee, the berry of *Coffea arabica* roasted and ground, contains from 1 to 2 per cent of Caffeine. It is indigenous to Abyssinia and the name is said to be derived from the arabic *K'hawah* or *Kaffa*, the name of a province in Abyssinia. It was in use as a beverage in that country during the 15th Century but its use was thought to date from time immemorial. At first, the habit does not seem to have spread much beyond the confines of Abyssinia, but its use is now almost universal. There is a legend that the discovery of the stimulating effect of the plant was due to the observation that a flock of sheep, which accidentally browsed on the plant, became elated and sleepless at night.

The beverage coffee is a 6 to 10 per cent decoction and a cup of strong coffee, made from about 15 grams (3 drachms), contains 0.1 to 0.12 gram (1 to 2 grain) of caffeine.

COCOA. Cacao, Cocoa or Chocolate is made from the seed of *Theobroma cacao*, which is indigenous to the Gulf of Mexico and Tropical South America as far south as the basin of the Amazon. The name *Theobroma* is derived from the Greek *Θεός* God and *βρώμα* food—food for the Gods. The Spaniards found it in use among the Aztecs as a beverage, which the latter called "*Chocolath*" from *Choco* cacao and *Lath* water. It was introduced into Europe by the Spaniards. Cacao contains chiefly theobromine, about 1 per cent., and a trace only of caffeine. It has, therefore, much less stimulating effect upon the central nervous system than either tea or coffee.

COLA. Cola or Kola, the nut of *Sterculia acuminata*, is used in Central Africa and contains 1½ to 3½ per cent. of Caffeine and some theobromine.

GUARANA PASTE. Made from the seed of *Paullinia sorbilis*, this is used by the Natives of Brazil and contains 4 to 5 per cent. of caffeine.

PARAGUAY TEA. Paraguay Tea or Yerba Maté, the leaf of *Ilex paraguayensis*, contains 1 to 2 per cent. of caffeine and is used in the Argentine.

APALACHE TEA. Apalache Tea or Youpon, the leaf of another species of *Ilex*, is used in Virginia and Carolina and owes its activity to the presence of caffeine.

Caffeine acts as a stimulant to the central nervous system, improves muscle contraction and causes diuresis. Though modified somewhat by the associated products, the action of tea and coffee is essentially that of caffeine. This causes an increase in mental and physical efficiency, produces a sense of comfort and relieves sensations of mental and physical fatigue. These effects are very useful, especially under the stress of modern conditions of life. Though they are regarded by some as wholly superfluous and the use of tea and coffee as a luxury, there is little doubt that they serve a very useful purpose in life. It is probable that the use of substances containing caffeine has not arisen by chance nor as a luxury but in response to a definite demand by our internal economy for such a stimulant.

In the case of tea and coffee, the volatile principles produce the usual effects of a volatile oil . . . carminative and psychic stimulation. Tea tannin and coffee oil derange the gastric digestion, when these beverages are taken in excess. Their consumption, however, produces no evil effects in the average individual. The nervous high-strung person is the one most likely to exceed the bounds of propriety in his use of them. Excess leads to the development of a tremulous nervousness, palpitation of the heart, insomnia, indigestion and headache. These symptoms are not dangerous and pass off readily if the habit is stopped. Habit produces very little tolerance to caffeine so that there are no marked abstinence symptoms on withdrawing the drug.

2. TOBACCO. The use of Tobacco is a non-addiction habit of a somewhat different type. It originated in North America, where the leaf was smoked before Columbus discovered the continent. The custom was rapidly introduced into England and soon spread to the continent of Europe. Nowadays, the habit is world-wide.

Tobacco habit takes three forms—smoking, snuffing and chewing. Smoking is the oldest and the commonest. Snuffing was introduced by Francis II of France, but is now rare after a long vogue. Chewing is a much more modern development and seems to be rather on the increase.

Whatever the form of the habit, nicotine is absorbed. Smoking tobaccos contain from 2 to 6 per cent. of this principle, but the proportion of available nicotine which is found in the smoke varies enormously. For example, Virginian cigarette tobacco contains, weight for

weight, nearly twice as much nicotine as Manila cigar tobacco, but the smoke from the latter contains twice as much as that from the former. Tobacco smoke contains, in addition to nicotine, carbon monoxide, hydrocyanic acid, pyridine and ammonia. The smoke is therefore alkaline and irritant, with consequent local effects on the mouth and throat.

The proportion of nicotine which comes over in the smoke depends mainly on the rate of combustion of the tobacco. Rapid dry combustion means considerable destruction of nicotine, while with slow moist combustion much of the nicotine survives and comes over in the smoke. Nicotine is strongly alkaline and irritant and after absorption produces stimulation followed by depression of the central nervous system and the ganglia of the autonomic nervous system.

The amount of carbon monoxide is negligible unless a large number of smokers congregate in a closed room. The amount of hydrocyanic acid is also negligible. Pyridine is irritant and on absorption produces stimulation of the medulla oblongata and the spinal cord. The symptoms of pyridine poisoning are nausea, vomiting, diarrhoea and palpitation. The ammonia is also of little moment, except that, through its alkalinity, it contributes to the local irritant action of the smoke. When tobacco is chewed or snuffed, the effects, local and systemic, are due to nicotine, but the habitue escapes the irritant action of the smoke on the respiratory tract. Tolerance to both nicotine and carbon monoxide is developed.

It is difficult to explain the pleasure of smoking. The habit arises mainly as a result of mimicry during adolescence, but, once acquired, it is difficult to throw off unless there is some urgent reason for so doing. Dixon thinks that the pleasure results from the stimulation followed by depressing effects of nicotine upon the central nervous system, but it is doubtful whether this wholly explains the attraction. Cushny thinks that the small rhythmic movements, entailing no exertion, which are connected with the use of tobacco, have a great deal to do with it. These have a soothing and pleasurable effect, much in the same way as the sucking of straws or the chewing of gum. The visual effects also play a part, else why the blowing of rings. Smoking in complete darkness gives no pleasure and it is stated that few blind men enjoy it.

The habit to tobacco, though it appears to the habitue to have a strong hold on him, is not difficult to break. Tolerance is easily lost

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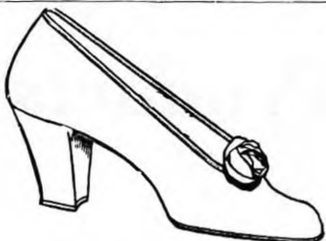
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and there are no disagreeable abstinence symptoms.

ADDICTION DRUGS.

1. OPIUM. The word Opium is derived from the Greek *ὀπιον* a diminutive from *ὀπός* juice. It is made from the juice of the unripe capsules of *Papaver somniferum*, a poppy.

This plant was originally indigenous to Southern Europe and Western Asia, but it is now widely cultivated. Opium was used in very early times as a medicine. Theophrastus, who lived from 372 B.C. till 288 or 287 B.C. and who was a disciple of Aristotle, described an extract made from the whole poppy plant which he called *μηκόνιον*. About A.D. 77 Dioscorides distinguished between *μηκόνιον* and *ὀπός* a more active extract derived from the capsules only. From the 1st to the 12th centuries the only Opium of commerce was that of Asia Minor. The first mention of opium cultivation in India is in the 16th century, but later India grew to become one of the greatest opium producing districts of the World. The Arabs introduced opium into China in the 18th century and it was originally used medicinally only. Later, in the 17th century, opium smoking established itself as a habit.

Opium is usually either eaten or smoked by habitues. Opium eating is commonest in Asia Minor, Persia and India. It seems to be more deleterious than smoking and this is probably due to the large amount of absorption which takes place in the former. Various reasons are given to account for the formation of the opium eating habit. Often it seems to start on account of disease, especially if there is much pain. Sometimes it arises through example. In the East it is often used from a mistaken belief in its aphrodisiac powers. In India its use frequently commences in famine years when the drug is taken to alleviate the pangs and suffering of hunger.

Smoking of opium, on the other hand, is most prevalent in China and the Indian Archipelago and in countries where Chinese are largely employed. Opium smoking was first practised in China. A specially prepared opium which has received the name of *Chandoo* is used for the purpose.

The use of Morphine as a habit is a more modern development. It is usually taken by hypodermic injection and the habit often arises from its medicinal use. There is quite a risk if opium or morphine are prescribed daily to a patient for about 12 days that the habit may be commenced, and there is very little chance of the patient escaping if a daily administration

of these substances is made over about three weeks. The habit with morphine is much less capable of cure than opium smoking or eating. It is commoner in North America and Europe than in the East, though it is stated to be becoming more popular in India and China.

Heroine, first brought to the notice of the medical profession in 1898, was not much used until 1912. It then came into fairly common use in America and to a less extent in Europe. It is a proprietary substance and at first was thought to have none of the risks of morphine so far as habit formation was concerned. This view is however erroneous. It was even at one time vaunted by its manufacturers as a cure for Morphinism, but this claim is not substantiated by results. As a matter of fact many morphine habitues take to heroine to avoid the extreme constipating effects of the former substance. The average morphine addict has one or two evacuations per week; the heroine taker's bowels are practically normal. Heroine habit usually arises from dissipation or curiosity. It is taken either by hypodermic injection, or by snuffing.

Apart from the less effect on the bowel, there seems little difference between heroine habit and morphine habit. The former is supposed to be easier of cure and not to produce such deleterious effects, but this is open to grave doubt. The heroine habit gets just as firm a hold of the addict as morphine does. When taken by snuffing it produces rhinitis.

The quantity of these substances taken to begin with is small, but the dose has usually to be steadily increased. Sometimes enormous doses have been recorded—De Quincey in his confessions of an opium-eater states that 320 grains (about 19 grams) of opium may be required to stay the craving. Half a pint of laudanum, a preparation containing 10% opium, (1% morphine) is stated to be no uncommon consumption in the 24 hours. In the case of Morphine a daily consumption of one gram is fairly common and as much as 5.5 gram has been reported. The average daily consumption of heroine is 0.6 gram and it may rise to 1 gram or even to 2.8 gram.

The habitual use of opium, morphine or heroine results in grave deleterious effects in the individual. He takes the drug for one of two effects. In the one case it is simply as an anodyne and to escape from the worries, discomfort, etc. of life often arising from the withholding of the accustomed dose. In the other case it is taken for its real toxic effects—the production of dreams and deep sleep. In either case the dose has soon to be increased as the usual amount ceases to produce the

desired effect. In addition the symptoms which begin to obtrude themselves when he is deprived of his dose, become more and more pressing. As it becomes due, he is restless, depressed, weak and even melancholy. The only thing which cures this condition is a further dose of the drug. It is not long before the symptoms which arise, as the effects of a dose are wearing off, become much more marked and the individual develops an uncontrollable craving for the drug, which may even amount to mania. Other symptoms which may arise during deprivation are hoarseness with spasmodic sneezing and yawning, twitchings of the muscles and cramps or violent pains, usually in the legs but sometimes in the abdomen. The confirmed addict, without his drug, is sleepless and very irritable. The digestion is often upset. There is extreme constipation except with heroine. The skin is hard, dry, rough and pale.

The changes in the character are perhaps more serious. The individual sinks progressively to the lowest level of unscrupulous cunning and cowardice. His word cannot be trusted and he will lie in preference to telling the truth, especially if the lying will aid him in getting a supply of his drug. His testimony can never be accepted even in an affair not affecting himself. He becomes incapable of any effort. Duty has no call on him. To escape it and still more to obtain the drug, he will resort to any lie or trick, no matter how dishonest. He promises anything and fulfils nothing. He would be fit for any crime, if the drug did not make him so cowardly and incapable of effort. His condition of mind is extremely unhappy as he fully realises his condition but can do nothing to counteract its advance. Finally he becomes a pariah—a social outcast. Death is often by overdosage.

2. HASHISH. Hashish or Indian Hemp is the "dried herb" obtained from *Cannabis Indica*, a variety of Hemp grown in hot climates. The name is derived from the Arabic "hashishin" a hemp eater, and curiously enough our word assassin comes from the same source. Hashish is either smoked, chewed or drunk.

Its native habitat appears to have been Asia round about the Caspian Sea. Medicinally and as an intoxicant it was known at a very early period in the Orient. It is mentioned in an ancient Chinese herbal of the 5th century B.C. During the early middle ages, its use spread through India, Persia and Arabia.

The dreams under the action of Hashish are its chief attraction and, apparently, can be very seductive. They vary with the individual and

with his nationality. The European is usually unspeakably happy under its influence. There are usually no depressing after-effects. Mentally, there is considerable impairment of judgment. Nothing, no matter how absurd, is impossible, to the hashishin.

3. COCAINE. The Alkaloid cocaine is obtained from the leaf of *Erythroxylon coca*, which is indigenous to South America. It is now grown in the West Indies, India, Ceylon and Java. In South America the leaves were and still are, chewed with lime. Elsewhere, the alkaloid or a salt is taken by hypodermic injection, sometimes by snuffing. The immediate effects of a dose are a sense of elation and increased mental and physical vigour. This stimulation of the central nervous system may go the length of delusions and mania. The stimulation is followed by profound depression.

The chronic effects of cocaine resemble those of morphine, except that there are more severe psychic disturbances, insomnia, hallucinations, apathy, melancholia and suicidal mania.

This is a habit of Western civilisation chiefly and is commonest among the lighter strata of society. It is frequently associated with alcoholism. Unfortunately, cocaine habit is also common among people who handle the drug in the course of their work and a fair number of cases have been reported among doctors, dentists and pharmacists.

4. ALCOHOL. The variety of alcoholic beverages which has been produced by the peoples of the world is truly amazing. Everywhere one goes, one finds that a method for fermenting and possibly distilling local materials has been evolved. As a result, the taking of alcohol in some form or another is very prevalent. All drinkers of alcohol are not necessarily addicted to it, but the line between non-addiction and addiction is ill-defined. The acute effects of excessive alcoholic drinking are too well-known to need full mention. It suffices to stress that the action is purely one of narcosis and that any symptoms of apparent stimulation are not due to stimulation but due to loss of normal inhibitions from depression of the higher parts of the brain. A serious consequence of taking alcohol is its effect in dulling or even abolishing the sense of judgment and sense of responsibility. There is little doubt that these play an important part in the production of many accidents, especially motor vehicle accidents.

Chronic alcoholic poisoning is characterised by catarrh of the gastro-intestinal tract, leading to cough, loss of appetite, irregularity of the bowels, a craving for spices, malnutrition and

thinness. Degenerative changes may develop in various organs, particularly the liver but these are essentially secondary to the gastrointestinal catarrh. It is thus apparent that chronic alcoholism results from the drinking of alcohol. Its absorption by other routes, e.g. the respiratory, is extremely unlikely to produce chronic poisoning, though decisions have been given in courts which negative this. The chronic alcoholic has a lowered resistance to microbial attack and his chances of recovery are greatly lessened. This is strikingly illustrated by the relative death rates in alcoholic and non-alcoholic lobar pneumonia cases. The character changes are not so marked as in the case of morphinism and cocaineism.

In conclusion, Let me quote a Persian allegory which epitomises the difference in the effects of alcohol, opium and hashish.

Three men, one under the effects of alcohol, one under the effects of opium, and the last under the effects of hemp, arrived one night at the closed gates of a city. "Let us break down the gates," said the alcohol drinker in a fury of rage, "I can do it with my sword." "Nay," said the opium eater, "we can rest here outside in comfort till the morning, when the gates will be opened, and we may enter." "Why all this foolish talk?" whined the one under the effects of hemp. "Let us creep in through the key-hole. We can make ourselves small enough."

